

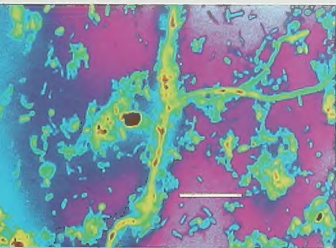
NHRI also has an instrument technology team for design and construction of specialized equipment, a systems group for computer operations and programming, a graphics and publications group, a library, and in-house financial and administrative support.

Collaboration

Through partnerships with universities and industry and through other collaborative programs, GCP scientists interact with more than twenty other research groups, including provincial, federal and international government agencies. The research group also supports and supervises graduate students and postdoctoral fellows in various areas of groundwater research.



CANADA'S GREEN PLAN



3D projection of a herbicide-degrading microbial biofilm.
(bar = 10 μ m)

Canada

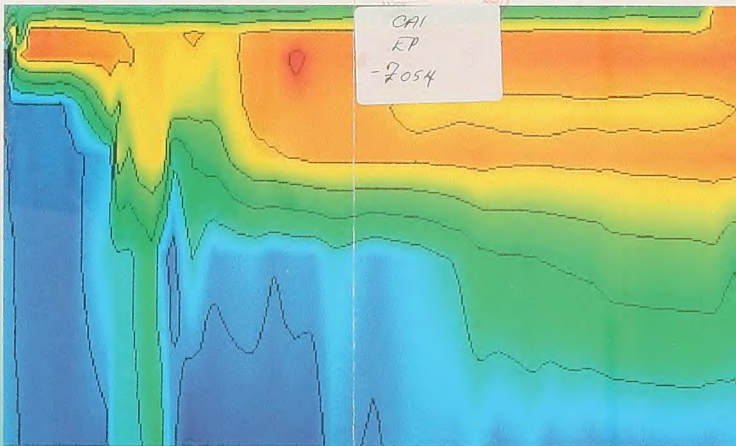
Inquiries

Inquiries concerning the Groundwater and Contaminants project should be directed to:

Groundwater and Contaminants Project
Science Liaison Division
National Hydrology Research Institute
11 Innovation Boulevard
Saskatoon, Saskatchewan
Canada S7N 3H5
Telephone (306) 975-5761

FAX (306) 975-5143

A list of current publications and research programs may also be obtained by writing to this address.



Colour rendering of pH plume (orange = pH 11+, blue = pH 7) in mesoscale aquifer, over time (x) with depth (y).

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GROUNDWATER AND CONTAMINANTS

RESEARCH PROJECT

NATIONAL
HYDROLOGY
RESEARCH
INSTITUTE

GOALS

One of the Institute's six research projects, the Groundwater and Contaminants Project (GCP) was formed to address fundamental scientific issues in accordance with Canada's Green Plan. Specific research areas include:

1

Assessment of the migration and remediation of contaminants such as pesticides, fertilizers, acid mine drainage waters and brines in the subsurface.

2

Investigation of the role of groundwater in sustainable development.

3

Development of fundamental knowledge of solute transport and geochemical and biological processes in groundwater systems.

The Institute



The National Hydrology Research Institute (NHRI) was established to provide expertise in various areas of water research, including the quality of Canada's groundwater supply. Together with two other Environment

Canada agencies, the Institute is housed in the National Hydrology Research Centre at Innovation Place, one of the largest science research parks in Canada. This location is adjacent to the University of Saskatchewan campus, home to a full range of academic departments and several government and non-government research facilities. Consequently, NHRI scientists have access to a wide variety of additional research expertise and equipment.

Ion analysis



Dye tracing during deep coring in shales



Research in the Groundwater and Contaminants Project



Sampling humid groundwater

The GCP conducts research on a variety of groundwater and related topics. Complementary areas of expertise among the nine research scientists allow for interdisciplinary studies and a more complete understanding both of processes in the subsurface environment and interactions between subsurface and surface environments.

Current research studies include:

- natural evolution of groundwater chemistry
- large-scale physical models of hydrogeologic systems
- microbial remediation of contaminants
- role of groundwater in prairie ecosystems, and interactions with surface waters
- transport of contaminants through geologic materials, with emphasis on clays, tills and shales
- application of stable isotope techniques to hydrologic systems
- identification of organic contaminants
- environmental impacts of mining

Technical services and staff

The Institute houses a range of state-of-the-art analytical instrumentation for application in groundwater research, including gas chromatography-mass spectrometry, stable isotope-mass spectrometry, high performance liquid chromatography, ion chromatography, atomic absorption, x-ray diffraction, scanning electron microscopy (EDAX) and scanning confocal laser microscopy. Basic equipment and space are available for obtaining and handling water, soil and sediment samples, and a staff of six full-time technicians provide research support and operate equipment.